

ordinary writing pen 144. Notice that the user can hold and write with the pen without accidentally activating any sensors, and without impairment of finger joint movement. In Fig. 8C we see the multi-finger embodiment 99, computer 20, and wireless receiver 132 from Fig. 7A being used with a computer keyboard 138. Notice that the thumb and fingertips are not covered and that finger joint movement is not impaired. This embodiment preserves the fingertip touch senses and joint movement of the user as needed for computer keyboard operation. Also notice that the sensors are located in a manner that prevents accidental sensor activation while typing. It is understood that there may be some unusual tasks that will make it difficult to not accidentally activate a sensor. Under these circumstances the user can simply temporarily turn the unit off. This could be very easily performed by configuring one of the sensor buttons as an on / off button, or even equipping the device with a separate on / off power button. Alternatively the user could even momentarily remove the device, or just retract the sensor assemblies as described previously for Figs. 3D and 4D.

Now referring to Fig. 9. This embodiment.....”

Page 17, line 9, change “ Now referring to Fig. 26. Here we “ TO “ Now referring to Fig. 10. Here we..... “

Page 17, line 17, change “ Now referring to Fig. 28. Here we “ TO “ Now referring to Fig. 11. Here we..... “

Page 17, line 29, change “ Now referring to Fig. 30. Here we “ TO “ Now referring to Fig. 12. Here we..... “

Page 19, line 14, change “as previously shown in Fig. 20A could.... “ TO “....as previously shown in Fig. 7A could.... “

Claims: Cancel all claims of record and substitute new claims 40 to 64 as follows:

“Claims: We claim:

40. A hand manipulated data apparatus for entering commands to a machine, comprising:
 - a. a sensor(s) for accepting hand manipulations, said sensor(s) having a signal output,
 - b. a electronics interface for converting the signal output from said sensor(s) to a format acceptable to said machine,
 - c. attaching means for affixing said sensor(s) to the human hand(s) in combination with said electronics interface,

- d. said attaching means further positioning said sensor(s) to be manipulated by the opposing finger(s) and / or thumb of the same hand that said sensor(s) are mounted on, whereby said sensor(s) are only activated by a deliberate effort of the user,
 - e. said attaching means further positioning said sensor(s) so as to avoid accidental sensor activation, whereby a user can hold a glass and perform other standard hand operations without accidentally activating a sensor(s).
41. The hand manipulated data apparatus of Claim 40 wherein said attaching means is further ergonomically shaped to expose the finger and / or thumb pads so as to preserve the tactile and gripping qualities of the human hand.
42. The hand manipulated data apparatus of Claim 40 wherein said attachment means is further ergonomically shaped, and said sensor(s) are further placed on said attachment means to facilitate universal right or left hand operation and / or universal finger or thumb operation, whereby the user can easily remove the device from one finger, thumb, or hand, and relocate the device on a different finger, thumb, or hand.
43. The hand manipulated data apparatus of Claim 40 wherein said attachment means further positions a part or all of said sensor(s) in a relocatable fashion whereby a part or all of said sensor(s) can be repositioned on said attachment means for universal right or left-hand operation, and / or universal thumb or finger operation.
44. The hand manipulated data apparatus of Claim 40 wherein said attachment means further positions a part or all of said sensor(s) on said attachment means in an adjustable fashion whereby the user can adjust and / or change the location(s) of a part or all of said sensor(s) to obtain customized sensor placement.
45. The hand manipulated data apparatus of Claim 40 wherein said attachment means further includes a non-slip interior surface for securing said attachment means onto the hand whereby said attachment means will not twist and turn while said sensor(s) are being manipulated.
46. The hand manipulated data apparatus of Claim 40 wherein said attachment means further includes an adjustable conforming means for securing said attachment means to a wide range of finger shapes and sizes, whereby a single apparatus is capable of fitting a wide range of users.
47. The hand manipulated data apparatus of Claim 40 wherein said electronics interface is in a separate enclosure from said attachment means, and further includes a transferring means for conveying said sensor output to said electronics interface, whereby said attachment means for mounting said sensor(s) can be smaller in size.
48. The hand manipulated data apparatus of Claim 47 wherein said transferring means comprises a cable structure that is routed between the base knuckles of the hand in a captive fashion, whereby the cable will not slip off the top of the hand, and the need for additional cable hold down straps is minimized or eliminated.

49. The hand manipulated data apparatus of Claim 47 wherein said transferring means is a cable structure that exits said attachment means in a manner that facilitates universal right or left hand operation, and / or universal thumb or finger operation.
 50. The hand manipulated data apparatus of Claim 47 wherein said transferring means is a cable structure that is retractable to and extendable from said electronics interface enclosure, whereby said cable is maintained in a gently snug fashion.
 51. The hand manipulated data apparatus of Claim 47 wherein said electronics interface enclosure further includes a relocating means for repositioning said attachment means, whereby said attachment means can be removed and docked onto or into said relocating means.
 52. The hand manipulated data apparatus of Claim 51 further including a cable retraction and extension means, wherein said transferring means is a cable structure that is retractable to and extendable from said relocating means, whereby said cable is maintained in a gently snug fashion when said sensor(s) is deployed, and the cable is neatly withdrawn when said attachment means is retracted.
53. A method for detecting hand manipulations and entering the corresponding commands to a machine, comprising the steps of:
- a. acquiring hand manipulation information from one or more sensor(s),
 - b. attaching said sensor(s) to the human hand(s) so that said sensor(s) can be manipulated by the opposing finger(s) and / or thumb of the same hand that said sensor(s) are mounted on, whereby said sensor(s) are only activated by a deliberate effort of the user,
 - c. further attaching said sensor(s) so as to avoid accidental sensor activation, whereby a user can hold a glass and perform other standard hand related duties without accidentally activating a sensor(s),
 - d. outputting signals from said sensor(s) that correspond to said hand manipulations,
 - e. converting the output from said sensor(s) to a format that is acceptable to said machine,
 - f. delivering said formatted signals to said machine.
53. The method of Claim 53 wherein said step of attaching purposely exposes the finger and / or thumb pads so as to preserve the tactile and gripping qualities of the human hand.
55. The method of Claim 53 wherein said step of attaching further places said sensor(s) on the human hand(s) to facilitate universal right or left hand operation and / or universal finger or thumb operation, whereby the user can easily remove the device from one finger, thumb, or hand, and relocate the device on a different finger, thumb, or hand.
56. The method of Claim 53 wherein said step of attaching further positions a part or all of said sensor(s) in a relocatable fashion whereby a part or all of said sensor(s) can be repositioned on